

FERN LIFE CYCLE

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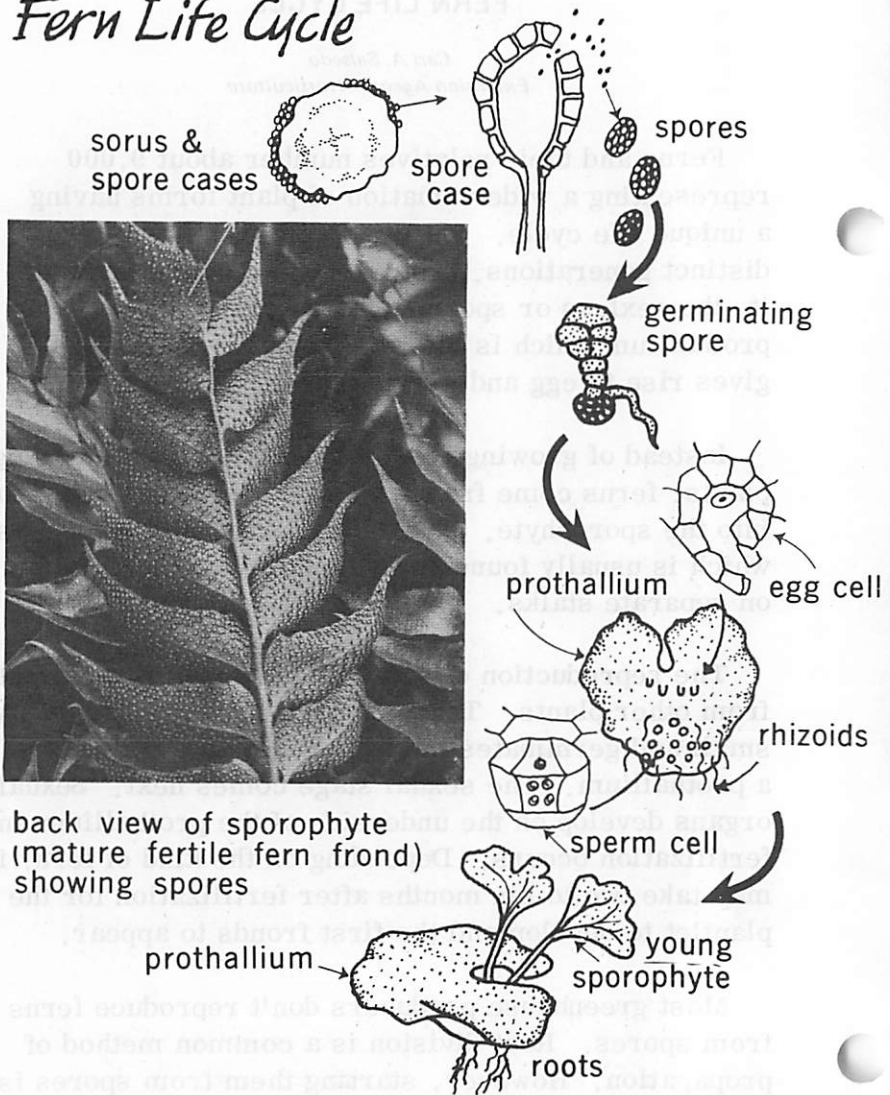
Ferns and their relatives number about 9,000 representing a wide variation of plant forms having a unique life cycle. The life cycle consists of two distinct generations. They are the fern as we know it, the sexless or sporophyte generation, and the prothallium which is the gametophyte generation that gives rise to egg and sperm cells.

Instead of growing from a seed like most flowering plants, ferns come from a simple spore which develops into the sporophyte. Spores are borne in a spore case which is usually found on the underside of a frond or on separate stalks.

The reproduction of ferns from spores is different from other plants. The individual spore is extremely small and germinates into a flat leaf-like body called a prothallium. The sexual stage comes next. Sexual organs develop on the underside of the prothallium and fertilization occurs. Depending on the kind of fern, it may take two to six months after fertilization for the plantlet to develop and the first fronds to appear.

Most greenhouse producers don't reproduce ferns from spores. Root division is a common method of propagation. However, starting them from spores is fairly simple. Place a mature plant over a flat containing peat moss or peat-lite mix. The pH should be adjusted to 5.5 - 6.0. This means that a pound of dolomitic limestone should be incorporated into each cubic foot of sphagnum peat moss. Then, wait for the young fern to appear.

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Ferns are generally grown in high organic soil mixes. Most of them grow best at a pH of 5.5 to 6.0. Nutrition should be minimal but adequate.

1. The sorus containing spore cases appears on the undersides of the fronds (leaves). These appear as brown or tan spots which are sometimes confused with insects or diseases.

2. Spores are discharged from the spore case and germinate under favorable environmental conditions giving rise to the prothallium.

3. The prothallium (gametophyte) gives rise to egg and sperm cells which combine to produce the young sporophyte.

4. The young sporophyte emerges with juvenile fronds that are not typical. As it grows, the prothallium dies. Typical fronds appear as the plant matures.

Dr. G.A.L. Mehlquist received the Connecticut Nurserymen's Association Award of Merit at the annual meeting on December 30, 1975. Along with the many other awards and prizes he has won, this one attests to the high esteem in which he is held by the industry, his colleagues and his friends.

Congratulations, Gus!